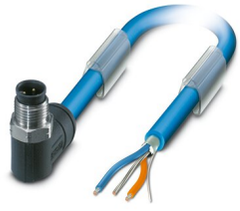
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Bus system cable - SAC-3P-M12MR/20,0-961 VA

1419101

https://www.phoenixcontact.com/gb/products/1419101

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Bus system cable, PROFIBUS PA (31.25 kbps), 3-position, PVC, blue RAL 5015, shielded, Plug angled M12, coding: A, on free cable end, cable length: 20 m, For Ex area with high-grade steel knurl

Commercial Data

Item number	1419101
Packing unit	1 pc
Minimum order quantity	1 pc
Sales Key	BF1CCG
Product Key	BF1CCG
Catalog Page	Page 430 (C-2-2019)
GTIN	4046356541688
Weight per Piece (including packing)	1,344 g
Weight per Piece (excluding packing)	1,344 g
Customs tariff number	85444290
Country of origin	PL

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Bus system cable - SAC-3P-M12MR/20,0-961 VA

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Technical Data

Notes

General	For applications in circuits of intrinsic safety protection type "i". Electrical values following EN 60079-14.

Product properties

Product type	Data cable preassembled
Number of positions	3
Application	Process technology
No. of cable outlets	1
Shielded	yes
Coding	B - inverse

Insulation characteristics

Overvoltage category	II
Degree of pollution	3

Interfaces

Bus system	PROFIBUS PA
Signal type/category	PROFIBUS PA, 31.25 kbps

LED signaling

Status display	No
Status display present	No

Electrical properties

Contact resistance	≤ 5 mΩ
Nominal voltage U_N	48 V AC
	60 V DC
Nominal current I_N	4 A
Transmission medium	Copper

Material specifications

Color Handle area	black
Flammability rating according to UL 94	HB
Sealing material	NBR
Material of grip body	TPU, hardly inflammable, self-extinguishing
Contact material	CuSn
Contact surface material	Ni/Au
Contact carrier material	TPU GF
Cable gland material	Stainless steel

Connection data

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Pin assignment

Contact | Color (signal designation) | Contact (optional)	1 (Plug) = OG (DATA+)
	3 (Plug) = BU (DATA-)
	4 (Plug) = SR (shield)

Connector

Insertion/withdrawal cycles	≥ 100

Header 1

Head design	Plug
Head cable outlet	angled
Head thread type	M12
Coding	A

Head 2

Head design	free cable end

Cable / line

Cable length	20 m
Cable weight	56.552 kg/km
Number of positions	2
Shielded	yes
Cable type	Fieldbus FOUNDATION/PROFIBUS PA, blue [961]
Signal speed	0.66 c
Conductor structure signal line	7x 0.40 mm
AWG signal line	18
Conductor cross section	2x 0.75 mm² (Signal line)
	1x 0.5 mm² (Drain wire)
Wire diameter incl. insulation	2.24 mm ±0.05 mm
External cable diameter	7.5 mm ±0.25 mm
Outer sheath, material	PVC
External sheath, color	blue RAL 5015
Conductor material	Tin-plated Cu litz wires
Material wire insulation	PO (Signal line)
Single wire, color	Blue, orange
Thickness, insulation	0.5 mm
Thickness, outer sheath	1 mm
Twisted pairs	2 cores to the pair
Overall twist	One pair with one drain wire and fillers for core
Optical shield covering	100 %
Max. conductor resistance	≤ 19.35 Ω/km (Signal line)
	26 Ω/km (shield)
Cable capacity	147 pF/m (at 1 kHz, core/shield)
	≤ 3.94 pF/m (capacitance unbalance)
Working capacitance	78 nF (at 1 kHz)

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Cable impedance	100 Ω ±20 % (At 31.25 kHz)
Nominal voltage, cable	300 V
Smallest bending radius, fixed installation	75 mm
Tensile strength	260 N
Shield attenuation	3 dB/km (at 39 kHz)
Flame resistance	UL 1685 (CSA FT 4)
	UL 1685 (vertical tray)
	UL 1666 (riser)
Special properties	UL standards PLTC-ER and ITC
Ambient temperature (operation)	-40 °C ... 105 °C (cable, fixed installation)

Cable structure

Cable type	Fieldbus FOUNDATION/PROFIBUS PA, blue
Signal type/category	PROFIBUS PA, 31.25 kbps
Outer sheath, material	PVC
External sheath, color	blue RAL 5015

Ambient conditions

Degree of protection	IP65
	IP67
	IP68
	IP69K
Ambient temperature (operation)	-25 °C ... 90 °C (Plug / socket)

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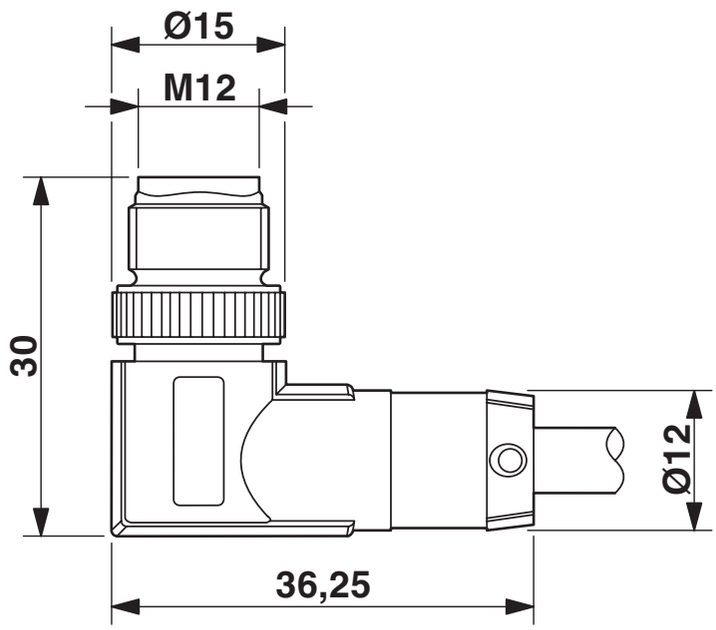
Bus system cable - SAC-3P-M12MR/20,0-961 VA

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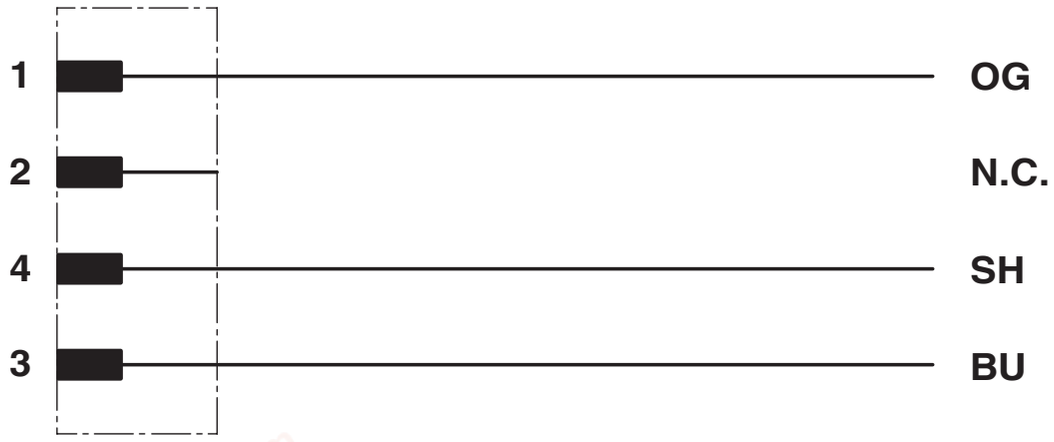
Drawings

Dimensional drawing



M12 x 1 male plug, angled

Circuit diagram



Contact assignment of the M12 plug

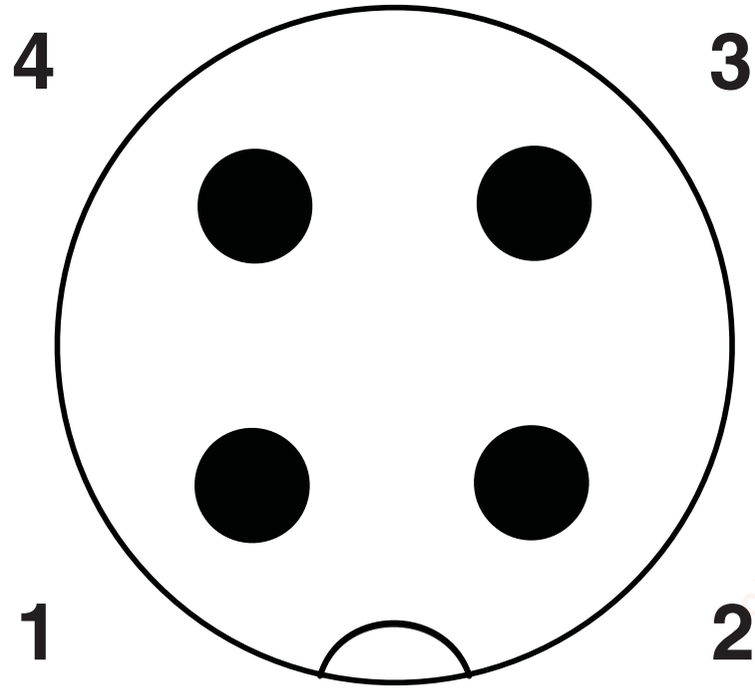
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Schematic diagram



Pin assignment M12 plug, 3-pos., A-coded, view male side

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Approvals

EAC
Approval ID: RU C-DE.BL08.B.00286

EAC
Approval ID: RU D-DE.HB35.B.00387

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Classifications

ECLASS

ECLASS-9.0	27060308
ECLASS-10.0.1	27060308
ECLASS-11.0	27060307

ETIM

ETIM 8.0	EC001855

UNSPSC

UNSPSC 21.0	26121600

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Environmental Product Compliance

China RoHS	Environmentally friendly use period: unlimited = EFUP-e
	No hazardous substances above threshold values

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Bus system cable - SAC-3P-M12MR/20,0-961 VA

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Accessories

Torque screwdriver

Torque screwdriver - TSD 04 SAC - 1208429

https://www.phoenixcontact.com/gb/products/1208429



Torque screwdriver, with preset torque of 0.4 Nm and 4 mm hexagonal drive for M12 connectors

Torque screwdriver

Torque screwdriver - TSD-M 1,2NM - 1212224

https://www.phoenixcontact.com/gb/products/1212224



Torque screw driver, accuracy as per EN ISO 6789 standard, adjustable from 0. 3 - 1.2 Nm

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Adapter insert

Adapter insert - TSD-M SAC-BIT ADAPTER - 1212600

https://www.phoenixcontact.com/gb/products/1212600



Adapter bit for TSD-M...torque tools, E6.3-1/4" drive with 4 mm hexagon to accommodate SAC bits

Tool

Tool - SAC BIT M12-W14 - 1212513

https://www.phoenixcontact.com/gb/products/1212513



Nut for assembling sensor/actuator cables with M12 connector and M12 connectors for assembly, with a hexagonal knurl wrench size of 14 mm, with 4 mm hexagonal drive

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Bus system cable - SAC-3P-M12MR/20,0-961 VA

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Cable-cutting tool

Cable-cutting tool - CUTFOX 12 - 1212128

https://www.phoenixcontact.com/gb/products/1212128



Cable cutter, for copper and aluminum up to 12 mm diameter (up to 35 mm^2)

Diagonal cutter

Diagonal cutter - CUTFOX-S VDE - 1212207

https://www.phoenixcontact.com/gb/products/1212207



Diagonal cutter for hard (piano wire) and soft wires, VDE 1000 V AC/1500 V DC tested

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Bus system cable - SAC-3P-M12MR/20,0-961 VA

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https://www.phoenixcontact.com/gb/products/1419101

Stripping tool

Stripping tool - VS-CABLE-STRIP-VARIO - 1657407

https://www.phoenixcontact.com/gb/products/1657407

Stripping tool, for the multi-level stripping of shielded cables



Diagonal cutter

Diagonal cutter - MICROFOX-SP-1 - 1212487

https://www.phoenixcontact.com/gb/products/1212487

Electronic diagonal cutter, tapered head, without chamfer, with opening spring, non-reflective phosphate-treated surface, punched version



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Bus system cable - SAC-3P-M12MR/20,0-961 VA

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https://www.phoenixcontact.com/gb/products/1419101

Stripping tool

Stripping tool - WIREFOX 4 - 1212156

https://www.phoenixcontact.com/gb/products/1212156



Stripping tool, for cables and conductors (especially for rubber and silicone insulations) from 0.1 - 4 mm^2, self-adjusting, stripping length of up to 18 mm, cutting capacity of up to 10 mm^2 stranded/1.5 mm^2 solid, replaceable stripping blade

Stripping tool

Stripping tool - WIREFOX-E 4 - 1212704

https://www.phoenixcontact.com/gb/products/1212704



Stripping tool, for cables and conductors (especially for rubber and silicone insulations) from 0.1 - 4 mm^2, self-adjusting, stripping length of up to 18 mm, cutting capacity of up to 10 mm^2 stranded/1.5 mm^2 solid, replaceable stripping blade

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Bus system cable - SAC-3P-M12MR/20,0-961 VA

1419101

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Stripping tool

Stripping tool - WIREFOX 10 - 1212150

https://www.phoenixcontact.com/gb/products/1212150



Stripping tool, for cables and conductors from 0.02 - 10 mm^2, self-adjusting, stripping length of up to 18 mm, cutting capacity of up to 10 mm^2 stranded/1.5 mm^2 solid, replaceable stripping blade

Protective hose adapter

Protective hose adapter - WP-CTA POM 13,0 BK - 1422884

https://www.phoenixcontact.com/gb/products/1422884



Protective hose adapter, for corrugated hoses with a nominal size of 13 (10 x 13), corrugated in parallel

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Bus system cable - SAC-3P-M12MR/20,0-961 VA

1419101

https://www.phoenixcontact.com/gb/products/1419101

Protective hose

Protective hose - WP-PA HF 13,0 BK - 3240681

https://www.phoenixcontact.com/gb/products/3240681



Protective hose, material: PA 6, filament: without, UV-resistant: yes, flexible, degree of protection: IP68, color: black, inflammability class in acc. with UL 94: V0, inner diameter: 10 mm, Total length: 50 m

Protective hose

Protective hose - WP-PA HF-HB 13,0 BK - 3240839

https://www.phoenixcontact.com/gb/products/3240839



Protective hose, material: PA 6, filament: without, UV-resistant: yes, flexible, degree of protection: IP68, color: black, inflammability class in acc. with UL 94: HB, inner diameter: 10 mm, Total length: 50 m

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Bus system cable - SAC-3P-M12MR/20,0-961 VA

1419101

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Data connector

Data connector - SACC-M12FS-4QO SH PBPA - 1413934

https://www.phoenixcontact.com/gb/products/1413934



Data connector, PROFIBUS PA (31.25 kbps), 2-position, halogen-free, shielded, Socket straight M12 SPEEDCON, Coding: A, Insulation displacement connection, knurl material: Zinc die-cast, nickel-plated, external cable diameter 5 mm ... 9.7 mm

Data connector

Data connector - SACC-M12MS-4QO SH PBPA - 1413933

https://www.phoenixcontact.com/gb/products/1413933



Data connector, PROFIBUS PA (31.25 kbps), 2-position, halogen-free, shielded, Plug straight M12 SPEEDCON, Coding: A, Insulation displacement connection, knurl material: Zinc die-cast, nickel-plated, external cable diameter 5 mm ... 9.7 mm

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